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ENTOMOLOGY.¹

Insects in Iowa.—Bulletin No. 11 (issued November, 1890) of the Iowa Agricultural Experiment Station contains four articles by Mr. C. P. Gillette, of considerable entomological interest. The first discusses the injuries and life-history of the Potato Stalk Weevil (*Trichobaris trinotata* Say), which has been unusually destructive in Iowa the past season. Mr. Gillette thinks that "half a million of dollars would fall far short of making good the loss that it has occasioned the state this year. In gardens where potatoes have grown year after year I have seldom found less than seventy-five per cent. of the stalks infested, and from this to ninety-three per cent. In field patches at a distance from where potatoes were grown last year I have found as few as twenty per cent. of the stalks infested, but in no case have I found the injuries less abundant than this." The next article discusses the Apple Curculio (*Anthonomus quadrigibbus* Say), and contains the first extended description of the method of oviposition of this insect. The two remaining articles discuss the currant-stem boring habits of *Hyperplatys aspersus* Say, commonly known as the Cottonwood Borer, and kerosene emulsion as a sheep dip and destroyer of parasites upon domestic animals. The experiments reported under this last heading are of great practical value. The author concludes with this paragraph: "I must say that after repeated experiments with kerosene emulsion, along with other substances commonly recommended for the destruction of vermin upon domestic animals, I feel certain that it is far ahead of anything I have tried when cheapness, effectiveness, ease of application, and freedom from possible bad effects are taken into account."

Indiana Insect Notes.—Bulletin No. 33 of the Purdue University Agricultural Experiment Station contains ten pages of entomological notes by Mr. F. M. Webster. The sub-titles are as follows: Experiments with the Plum Curculio; Notes on Strawberry Insects (*Tyloderma fragariae*, *Halitica ignita*, and the Field Cricket); Some Hitherto Unrecorded Enemies of Raspberries and Blackberries (*Solenopsis fugax*, *Limonus auripilis*, *Carpophilus brachypterus*, *Iulus impressus*, and *Cosmopepla carnifex*). Most of these notes are republished from *Insect Life*. The Plum Curculio experiments were made chiefly to determine to what extent the insect develops in native varieties of plums, and they showed that the insects do breed freely in them. The eco-

¹ Edited by Dr. C. M. Weed, Columbus, Ohio.

nomic points are summarized as follows: “(1) The variety of plum or apple whose blooming season covers the greatest period of time will best withstand the work of the curculio; (2) the planting of plum trees in the apple orchard will not protect the latter, and vice versa; (3) if anything is to be gained by using another fruit to draw off the curculio and protect the plum, the nectarine will probably serve as well as the apple; (4) adult curculio beetles eat the pulp of apples; (5) curculios will deposit their eggs in fruit hanging over the water; (6) the indications are that the Strawberry Crown Borer lays its eggs during March and April in the plants near the surface of the ground; (7) burning strawberry plants after fruit-picking may destroy the Crown Borer; (8) the common field cricket will eat strawberries.”

Oviposition of the Apple Curculio.—Mr. C. P. Gillette has lately described the process by which the eggs of *Anthonomus quadrigibbus* are deposited. The description was originally read before the Iowa Academy of Science, September, 1890, and has since been published in Bulletin No. 11 of the Iowa Experiment Station (pp. 492-493). Mr. Gillette says: “I am not aware that any one has published actual

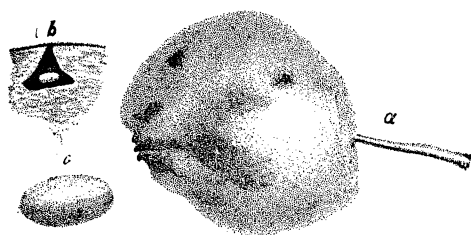


FIG. 1, *a*, apple infested by the Apple Curculio; *b*, egg-cavity, natural size; *c*, egg very much enlarged. Redrawn from Gillette.

observations on the method of oviposition of this insect. On the 13th of last June I was fortunate enough to see a female perform the entire operation, which was done as follows: First, a cavity (Fig. 1, *b*) was eaten in the apple as deep as the beak was long, the bottom being much enlarged and subtriangular in outline. The walls of the cavity converge to the opening, which is only large enough to admit the slender beak. When first noticed the beetle had begun her work and it was 30 minutes before the egg-cavity was completed. The beetle, almost immediately after withdrawing her beak, turned about and applied the tip of her abdomen to the small opening into the egg-cavity. After remaining in this position for about five minutes she walked away without turning about to inspect the work she had done.

I at once plucked the apple, and examined closely the identical spot where the beetle had been at work, and was surprised to find that there was no puncture to be seen in the skin of the apple, but only a minute brown speck. I found that the beetle had plugged the little opening with what appeared to be a bit of pomace, probably excrement, and she had done the work so nicely that I think no one would have suspected that this little speck marked the place of oviposition of this insect, unless he had seen such specks before, and knew what they signify. With a sharp knife a section was made through this egg-chamber, which I have endeavored to represent natural size, at Fig. 1, *b*, with the egg at the bottom.

Although it is almost impossible to distinguish newly stung fruit from external appearances, it becomes very easy after a few days when the infested apples become gnarly and ill-shapen, as shown in Fig. 1, *a*.

PSYCHOLOGY.

Professor Moll on Hypnotism.¹—This work is a general résumé of what is known of hypnotism. The exposition by Prof. Moll covers most of the ground in an adequate manner, and is therefore well adapted for the instruction of the general reader. The author holds that suggestion is the efficient cause of the phenomena, and therefore regards the subject primarily as a branch of psychology, rather than of physiology. He states that most persons of healthy mental organization can be hypnotized, and that susceptibility, except in extreme cases, is not a mark of mental weakness. Persons of the nervous temperament are most susceptible, and idiots and insane persons can be hypnotized in a small proportion of cases only. Susceptibility is not confined to any race or nation, so far as known. The statements of the numerous investigators are subjected to rigid and rational criticism, and nothing is accepted or rejected without adequate evidence. The author pursues a judicial course in this respect, and refuses his assent to wholesale and uncritical scepticism, as well as to excessive credulity. Physiological explanations are frequently held in reserve as not proven, whatever degree of probability may attach to them.

The abundance of well-established facts now recorded in the literature of hypnotism has placed the subject within the domain of exact

¹ Hypnotism; by Albert Moll. The Contemporary Science Series. London: Walter Scott. New York: Scribner and Welford. 8vo. Edited by Havelock Ellis, 1890.